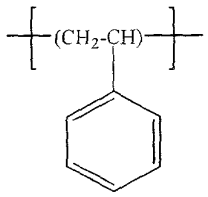
We Claim:

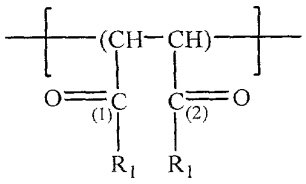
1. A polymer comprising recurring monomers of the formulas

Scheme A

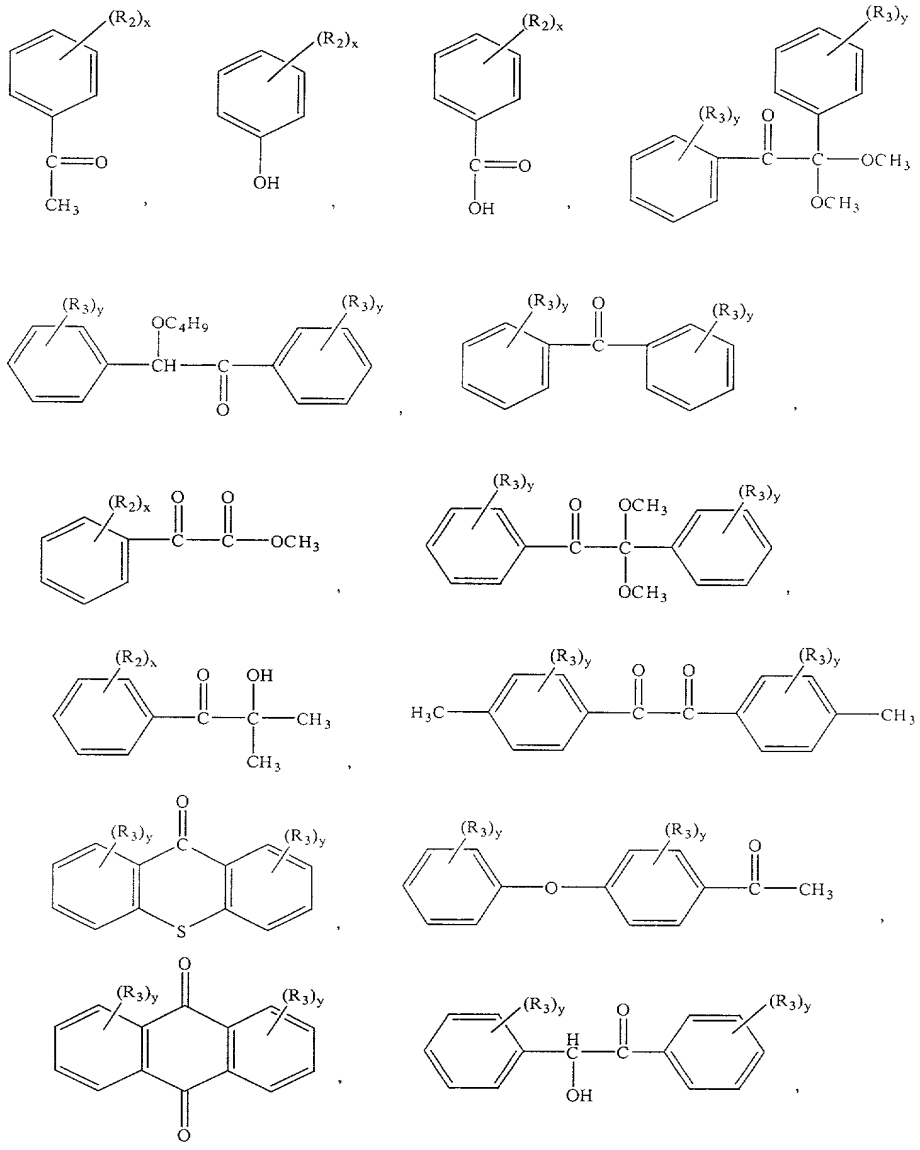


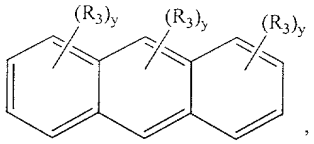
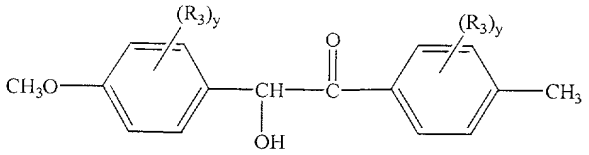
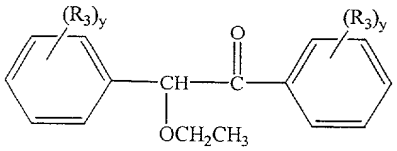
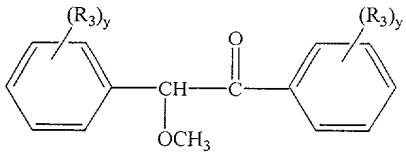
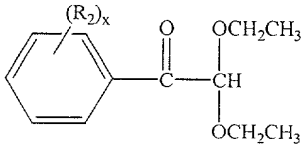
and

Scheme B



wherein R_1 is a compound selected from the group consisting of -OH groups and those represented by the following formulas:







, and

.

where:

each R_2 is individually selected from the group consisting of hydrogen, $-NH_2$, and -NH;

x is a number ranging from 1-5;

at least one R_2 is -NH and said at least one -NH is bonded to one of the carbon atoms labeled with a (1) or a (2);

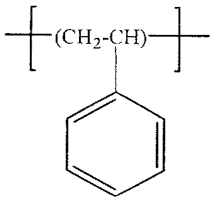
each R_3 is individually selected from the group consisting of hydrogen, $-NH_2$, and -NH; and

y is a number ranging from 0-5, with there being at least one R_3 which is -NH and said at least one -NH is bonded to one of the carbon atoms labeled with a (1) or a (2),

at least one R_1 being one of said compounds represented by the above formulas.

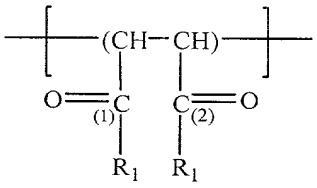
2. The polymer of claim 1, wherein said polymer comprises recurring monomers of the formulas

Scheme A

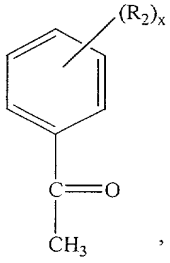


and

Scheme B



wherein R_1 is a compound selected from the group consisting of -OH groups and those represented by the following formulas: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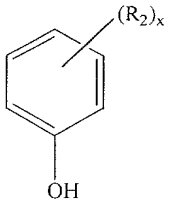
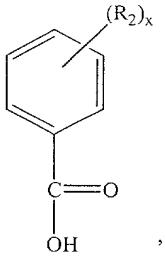

, and

,

where:

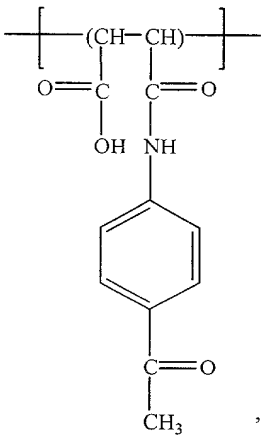
each R_2 is individually selected from the group consisting of hydrogen, $-NH_2$, and -NH;

x is a number ranging from 1-5; and

at least one R_2 is -NH and said at least one -NH is bonded to one of the carbon atoms labeled with a (1) or a (2), and

there being at least one of each of said R_1 compounds present in said polymer.

3. The polymer of claim 1, wherein said polymer comprises recurring monomers of the formulas



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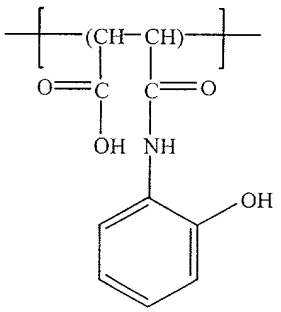
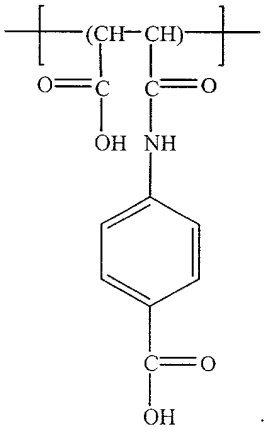


, and

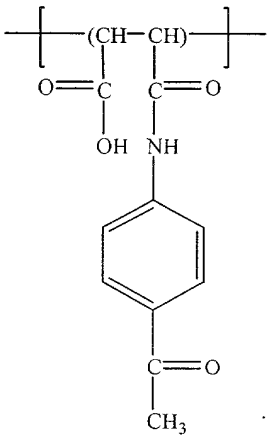


.

4. The polymer of claim 1, wherein the molecular weight of said polymer is from about 7,000-13,000 Daltons.

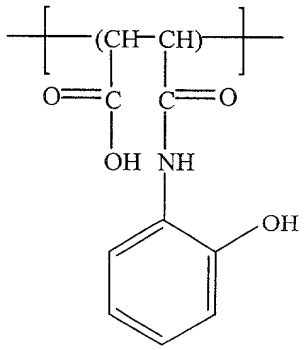
5. The polymer of claim 1, wherein said polymer comprises from about 5-70% by weight of a photoinitiating group bonded to the Scheme B monomers, said percentage by weight being based upon the total weight of polymer taken as 100% by weight and being only the weight attributable to the photoinitiating group.

6. The polymer of claim 5, wherein said photoinitiating group bonded to a Scheme B monomer is represented by the formula



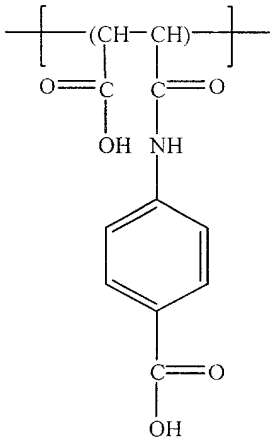
7. The polymer of claim 1, wherein said polymer comprises from about 2-50% by weight of a group bonded to the Scheme B monomers for improving the adhesion to a substrate of compositions containing said polymer, said percentage by weight being based upon the total weight of the polymer taken as 100% by weight and being only the weight attributable to said adhesion-improving group.

8. The polymer of claim 7, wherein said adhesion-improving group bonded to a Scheme B monomer is represented by the formula



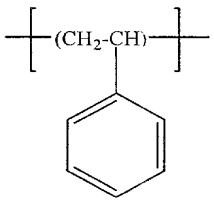
9. The polymer of claim 1, wherein said polymer comprises from about 2-50% by weight of a group bonded to the Scheme B monomers for improving the solubility in alkali developing solutions of compositions containing said polymer, said percentage by weight being based upon the total weight of the polymer taken as 100% by weight and being only the weight attributable to the photoinitiating group.

10. The polymer of claim 9, wherein said solubility-improving group bonded to a Scheme B monomer is represented by the formula



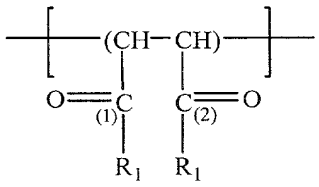
11. A composition useful for forming pixels in a liquid crystal display, said composition comprising a polymer dissolved in a solvent system. the improvement which comprises said polymer comprising recurring monomers of the formulas

Scheme A

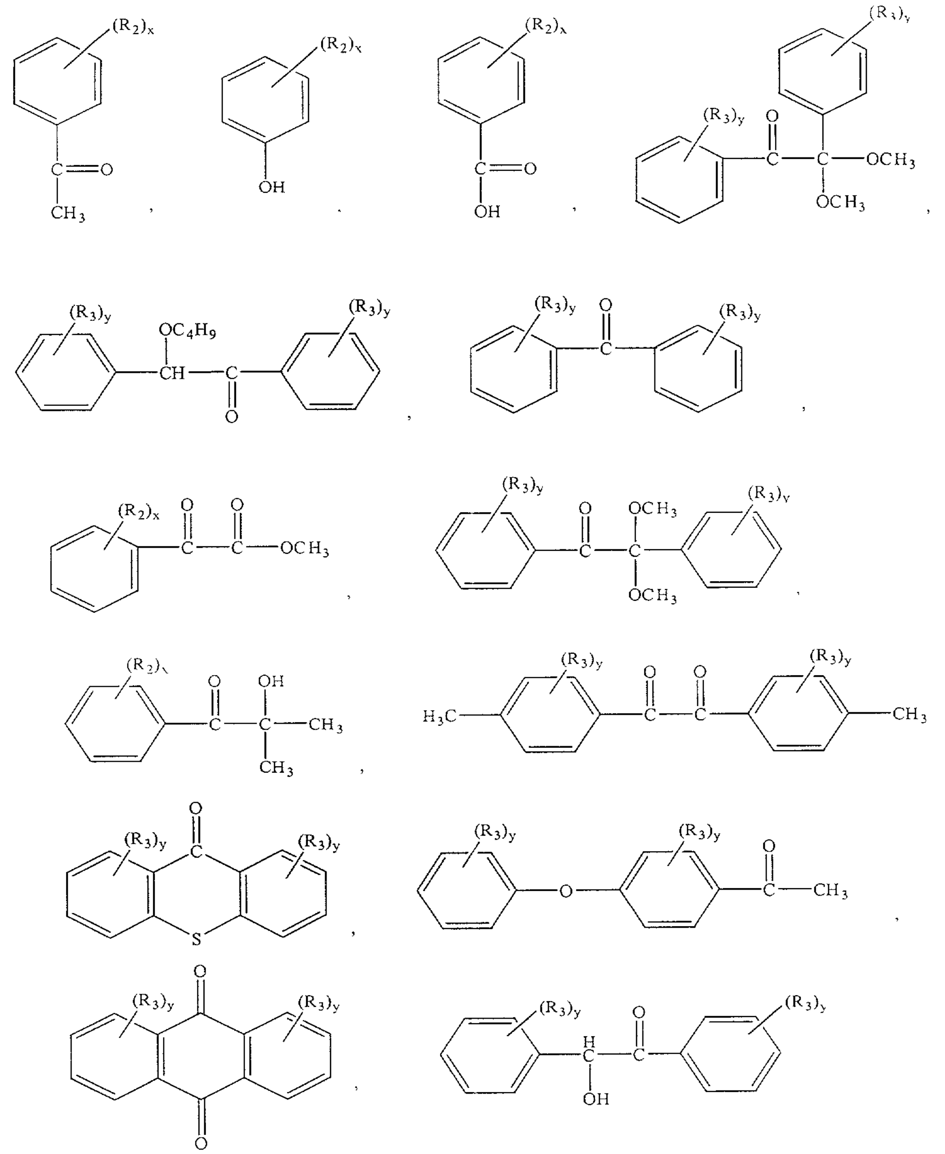


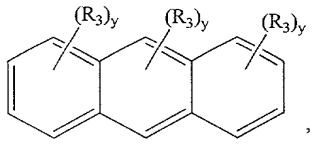
and

Scheme B



wherein R_1 is a compound selected from the group consisting of -OH groups and those represented by the following formulas:


(R2)x
C=O
CH3
OH
(R3)y
OCH3
OC4H9
CH
C
O
H3C
CH3
S
O
H



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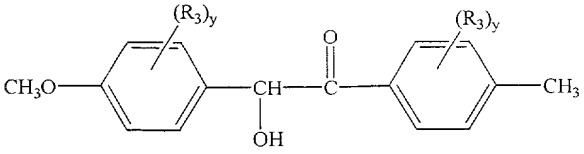
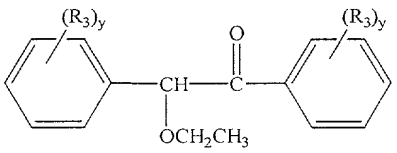


,



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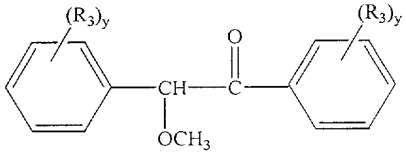
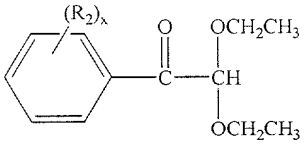


, and



,

where:

each R_2 is individually selected from the group consisting of hydrogen, $-NH_2$, and -NH;

x is a number ranging from 1-5;

at least one R_2 is -NH and said at least one -NH is bonded to one of the carbon atoms labeled with a (1) or a (2);

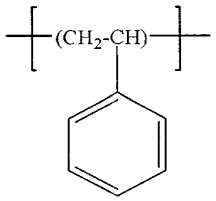
each R_3 is individually selected from the group consisting of hydrogen, $-NH_2$, and -NH; and

y is a number ranging from 0-5, with there being at least one R_3 which is -NH and said at least one -NH is bonded to one of the carbon atoms labeled with a (1) or a (2),

at least one R_1 being one of said compounds represented by the above formulas.

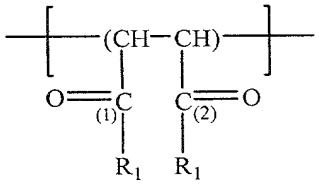
12. The composition of claim 11, wherein said polymer comprises recurring monomers of the formulas

Scheme A

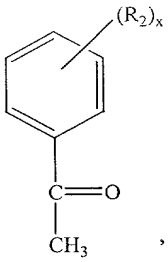


and

Scheme B



wherein R_1 is a compound selected from the group consisting of -OH groups and those represented by the following formulas: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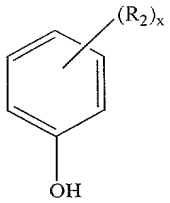
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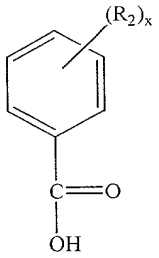

,

where:

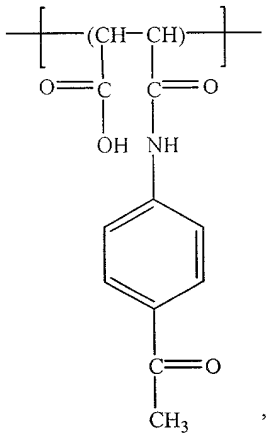
each R_2 is individually selected from the group consisting of hydrogen, $-NH_2$, and -NH;

x is a number ranging from 1-5; and

at least one R_2 is -NH and said at least one -NH is bonded to one of the carbon atoms labeled with a (1) or a (2), and

there being at least one of each of said R_1 compounds present in said polymer.

13. The composition of claim 11, wherein said polymer comprises recurring monomers of the formulas



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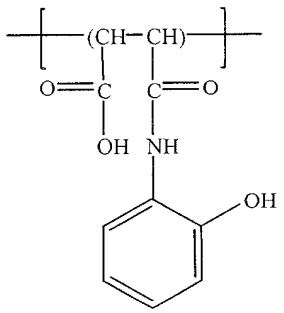
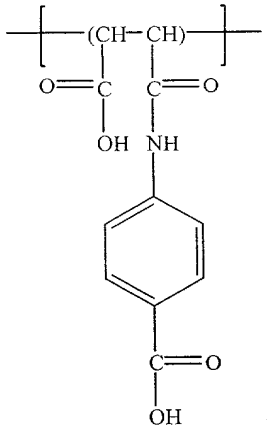


, and

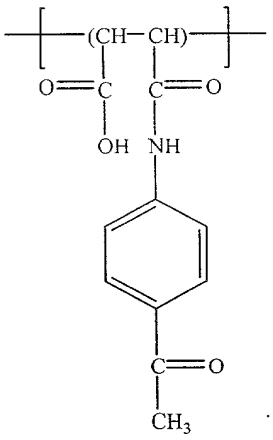


.

14. The composition of claim 11, wherein the molecular weight of said polymer is from about 7,000-13,000 Daltons.

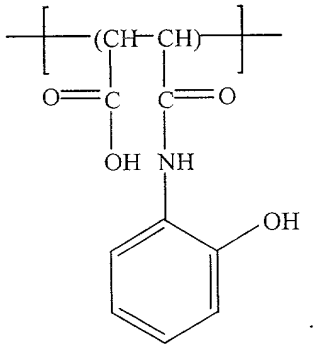
15. The composition of claim 11, wherein said polymer comprises from about 5-70% by weight of a photoinitiating group bonded to the Scheme B monomers, said percentage by weight being based upon the total weight of polymer taken as 100% by weight and being only the weight attributable to the photoinitiating group.

16. The composition of claim 15, wherein said photoinitiating group bonded to a Scheme B monomer is represented by the formula



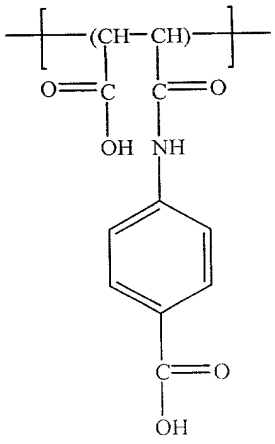
17. The composition of claim 11, wherein said polymer comprises from about 2-50% by weight of a group bonded to the Scheme B monomers for improving the adhesion to a substrate of compositions containing said polymer, said percentage by weight being based upon the total weight of the polymer taken as 100% by weight and being only the weight attributable to said adhesion-improving group.

18. The composition of claim 17, wherein said adhesion-improving group bonded to a Scheme B monomer is represented by the formula



19. The composition of claim 11, wherein said polymer comprises from about 2-50% by weight of a group bonded to the Scheme B monomers for improving the solubility in alkali developing solutions of compositions containing said polymer, said percentage by weight being based upon the total weight of the polymer taken as 100% by weight and being only the weight attributable to the photoinitiating group.

20. The composition of claim 19, wherein said solubility-improving group bonded to a Scheme B monomer is represented by the formula

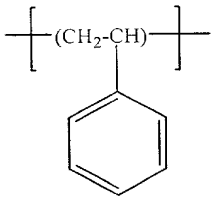


21. The combination of:

a substrate; and

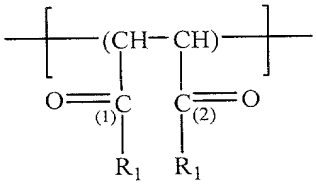
an image layer comprising a matrix of pixels, said image layer being deposited on said substrate and said pixels being formed from a composition comprising a polymer which comprises recurring monomers of the formulas

Scheme A

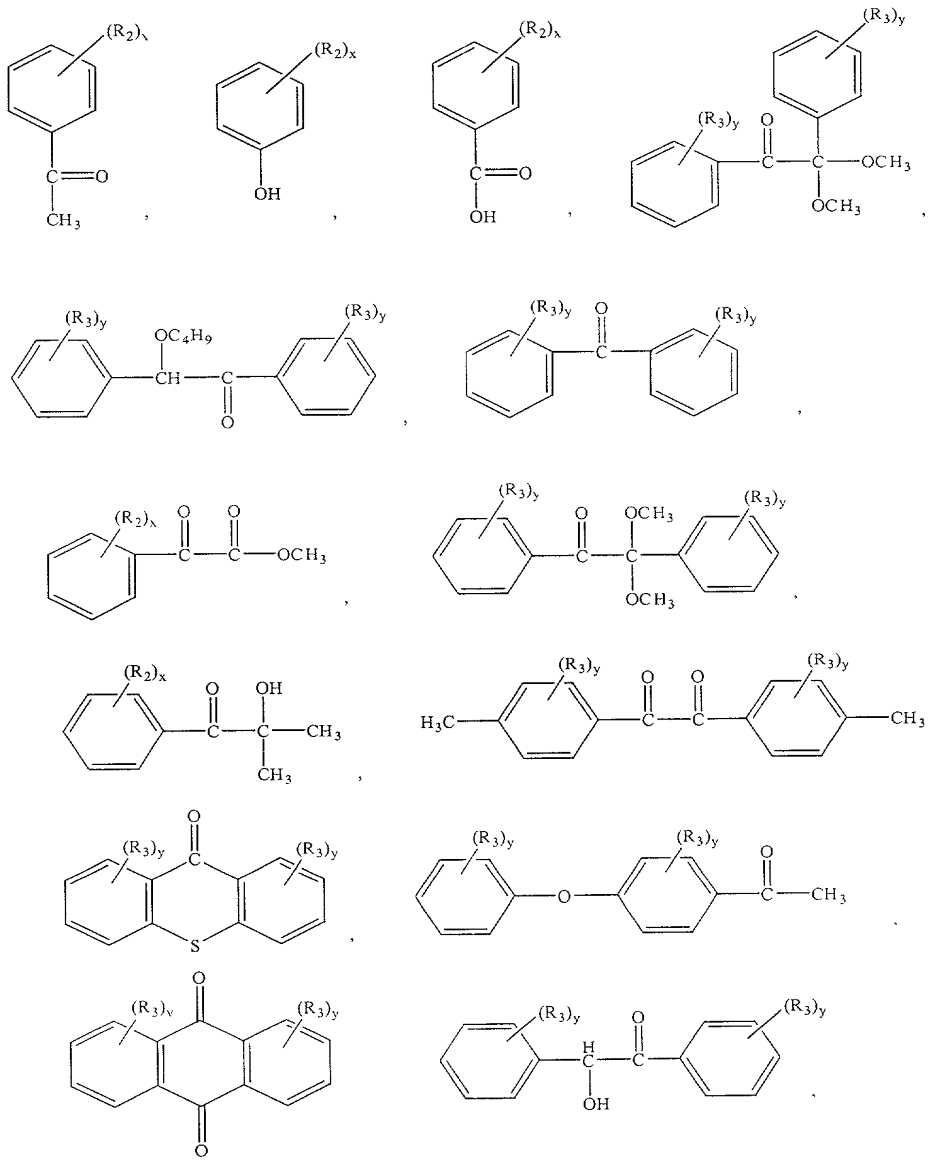


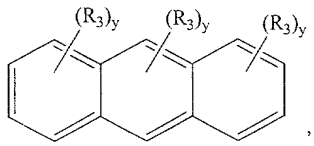
and

Scheme B



wherein R_1 is a compound selected from the group consisting of -OH groups and those represented by the following formulas:


(R2)x
C=O
CH3
OH
OCH3
(R3)y
OC4H9
CH
H3C
CH3
S
O



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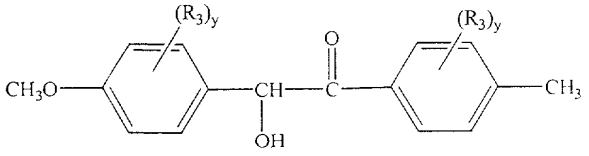

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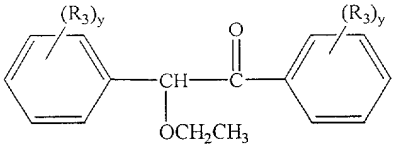

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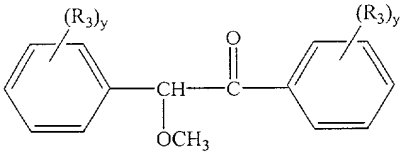
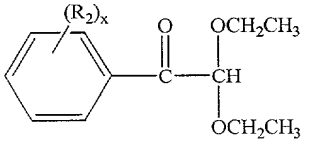


, and



,

where:

each R_2 is individually selected from the group consisting of hydrogen, $-NH_2$, and -NH;

x is a number ranging from 1-5;

at least one R_2 is -NH and said at least one -NH is bonded to one of the carbon atoms labeled with a (1) or a (2);

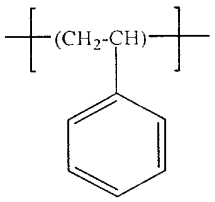
each R_3 is individually selected from the group consisting of hydrogen, $-NH_2$, and -NH; and

y is a number ranging from 0-5, with there being at least one R_3 which is -NH and said at least one -NH is bonded to one of the carbon atoms labeled with a (1) or a (2),

at least one R_1 being one of said compounds represented by the above formulas.

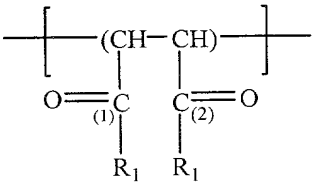
22. The combination of claim 21, wherein said polymer comprises recurring monomers of the formulas

Scheme A

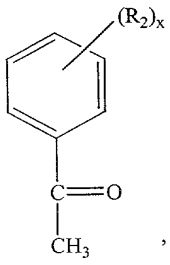
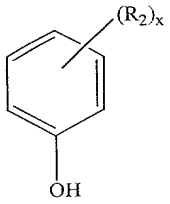
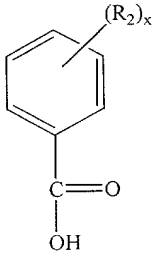


and

Scheme B



wherein R_1 is a compound selected from the group consisting of -OH groups and those represented by the following formulas:


,

, and

,

where:

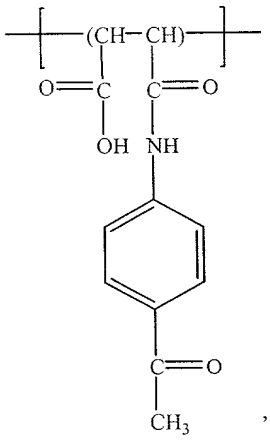
each R_2 is individually selected from the group consisting of hydrogen, $-NH_2$, and -NH;

x is a number ranging from 1-5; and

at least one R_2 is -NH and said at least one -NH is bonded to one

of the carbon atoms labeled with a (1) or a (2), and there being at least one of each of said R_1 compounds present in said polymer.

23. The combination of claim 21, wherein said polymer comprises recurring monomers of the formulas



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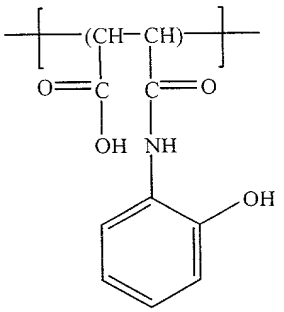
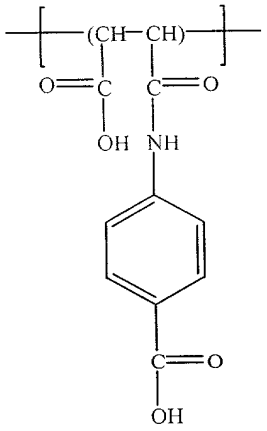


, and

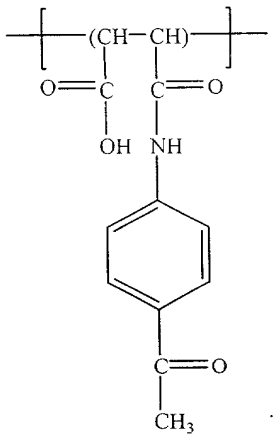


.

24. The combination of claim 21, wherein the molecular weight of said polymer is from about 7,000-13,000 Daltons.

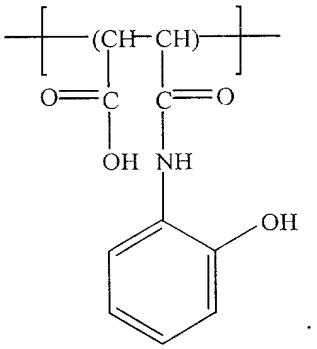
25. The combination of claim 21, wherein said polymer comprises from about 5-70% by weight of a photoinitiating group bonded to the Scheme B monomers, said percentage by weight being based upon the total weight of polymer taken as 100% by weight and being only the weight attributable to the photoinitiating group.

26. The combination of claim 25, wherein said photoinitiating group bonded to a Scheme B monomer is represented by the formula



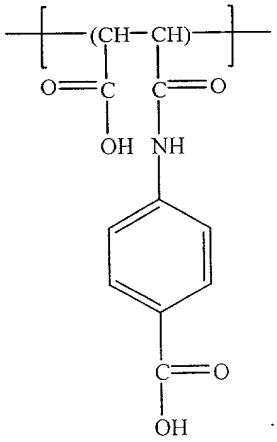
27. The combination of claim 21, wherein said polymer comprises from about 2-50% by weight of a group bonded to the Scheme B monomers for improving the adhesion to a substrate of compositions containing said polymer, said percentage by weight being based upon the total weight of the polymer taken as 100% by weight and being only the weight attributable to said adhesion-improving group.

28. The combination of claim 27, wherein said adhesion-improving group bonded to a Scheme B monomer is represented by the formula



29. The combination of claim 21, wherein said polymer comprises from about 2-50% by weight of a group bonded to the Scheme B monomers for improving the solubility in alkali developing solutions of compositions containing said polymer, said percentage by weight being based upon the total weight of the polymer taken as 100% by weight and being only the weight attributable to the photoinitiating group.

30. The combination of claim 29, wherein said solubility-improving group bonded to a Scheme B monomer is represented by the formula



31. The combination of claim 21, wherein said substrate is formed of glass.

32. The combination of claim 21, wherein said image layer comprises a matrix of a plurality of differently colored pixels.

33. The combination of claim 32, wherein said image layer comprises a matrix of at least red, green, blue pixels.

34. The combination of claim 21, said filter further comprising a cured protective layer deposited on said image layer.

35. The combination of claim 21, wherein said image layer has a resolution of less than about 5 μm.

36. The combination of claim 21, said composition gives a solvent resistance test result of less than about 5 when PGMEA is used as the solvent.

37. The combination of claim 21, wherein said composition when formed into a cured film has a pencil hardness of at least about 2B.

38. The combination of claim 21, wherein when said image layer has a thickness of about 1.5 μm, said image layer transmits from about 70-95% of light at a wavelength of from about 400-700 nm.

39. A method of forming a color filter comprising the steps:

applying a quantity of the composition of claim 11 to a substrate to form a coating layer;

baking said coating layer at a temperature of from about 80-120°C;

selectively exposing said baked layer to UV light;

developing said exposed layer; and

curing said developed layer at a temperature of from about 150-210°C.

40. The method of claim 39, wherein said baked layer is exposed to light having a wavelength of from about 200-500 nm.

41. The method of claim 39, wherein said developing step comprises contacting said exposed layer with an alkali developing solution.

42. The method of claim 39, wherein said substrate is formed of glass.

43. The method of claim 39, wherein said exposing, developing, and curing steps yield an image layer comprising a matrix of colored pixels.

44. The method of claim 43, wherein said applying step comprises applying a quantity of a composition of a first color, and further including the step of repeating said applying, baking, exposing, developing, and curing steps with a composition of a color different than said first color to yield an image layer comprising a matrix of differently-colored pixels.

45. The method of claim 44, wherein said image layer comprises a matrix of at least red, green, blue pixels.

46. The method of claim 43, further including the steps of applying a protective layer to said image layer and curing said applied protective layer.

47. The method of claim 43, wherein said image layer has a resolution of less than about 5 μm.

48. The method of claim 39, said composition gives a solvent resistance test result of less than about 5 when PGMEA is used as the solvent.

49. The method of claim 39, wherein said cured layer has a pencil hardness of at least about 2B.

50. The method of claim 43, wherein when said image layer has a thickness of about 1.5 μm, said image layer transmits from about 70-95% of light at a wavelength of from about 400-700 nm.